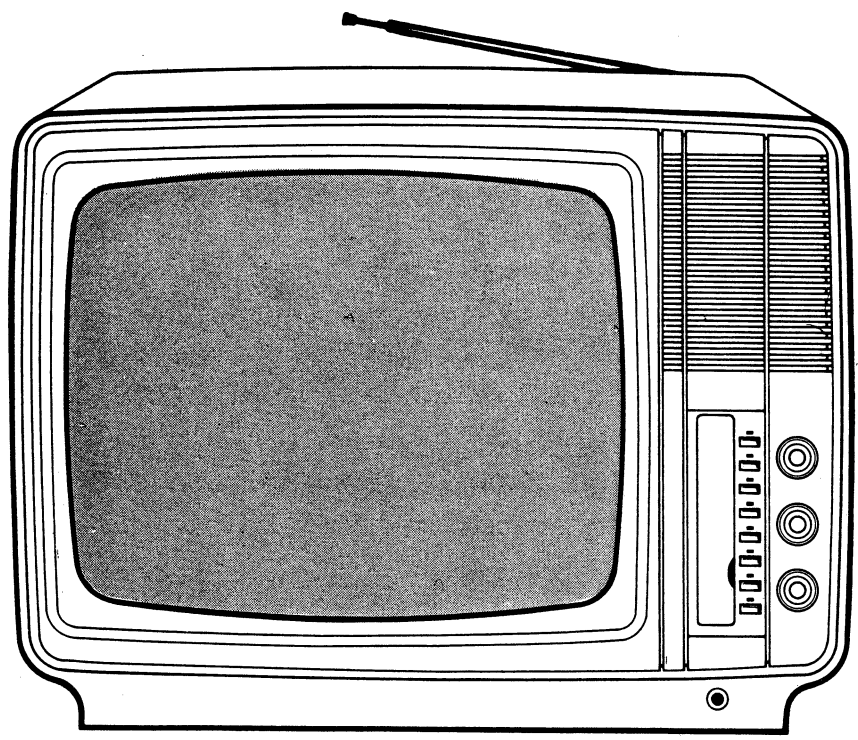
12″ B/W TELEVISION

# Service Manual

TENSAI TV1207



# MODEL AND CHASSIS CROSS REFERENCE

| MODEL | CHASSIS | TUNER | PICTURE TUBE |
|---|---|---|---|
| TV 1207 SERIES | MC-22G | VTE-1CDH | 310EUB4 |

# SPECIFICATIONS

*** POWER INPUT**

1. AC 220 Volts, 50Hz.
2. DC 12V-16V External Battery Source

*** POWER CONSUMPTION**

33 Watts at AC 220 Volts

*** ANTENNA INPUT IMPEDANCE**

75 ohm (Unbalanced)

*** SOUND OUTPUT POWER**

500mW at 10% THD

*** HIGH VOLTAGE**

10.7KV

*** RECEIVING CHANNELS**

VHF 2-12
UHF 21-69

*** INTERMEDIATE FREQUENCY**

Picture I-F : 38.9MHz
Sound I-F : 33.4MHz
Intercarrier Frequency : 5.5MHz

*** DIMENSION**

W375 X H296 X D304

*** WEIGHT (NET)**

6.5kg

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# SERVICE INFORMATIONS

## * PRELIMENARY

1. The DC Voltage at Q901 Emitter is 11.0V ± 0.3V, when AC 220 Volts is supplied to the set.
2. When servicing, the AC power line voltage must not exceed 240 volts.

## * CENTERING

The picture is centered on the screen by two disc magnets around the neck of the picture tube directly behind the yoke. To center the picture horizontally and vertcally rotate the two magnets separately or together. Center the picture so that the black edge at left and right is equal and the black edge at top and bottom is equal. Centering must be adjusted correctly to maintain good linearity.

## * VERTICAL SIZE

1. Set contrast and brightness controls R207 R803 to maximum.
2. Adjust vertical height control R311 so that the circles in pattern to be completely circular.
3. The picture should slightly overscan the mask at sides and at the top and bottom.
4. If the adjustment of vertical linearity is necessary, replace R315 with other resistor having similar value.

## * HORIZONTAL FREQUENCY ADJUSTMENT

1. Disable sync by grounding the base of the Q301 with capacitor (10 μF/16V).
2. Adjust the Horizontal Hold control (T401) so that picture sides are vertical (eliminate the horizontal bars).

## * AGC DELAY ADJUSTMENT

The AGC delay control, R111, is set at the factory and should need no adjustment.
Before any adjustment of the control, note and carefully mark the physical setting of the semifixed variable resistor.
Turn the control in the direction which causes snow to oppear, then in the opposite direction until snow just disappears.
If the control cannot be adjusted into noise, return the shaft to its original point.

## * B+ VOLTAGE ADJUSTMENT

Adjust R905 So that the voltage of the emitter of Q901 may be 11.0V ± 0.3V when input voltage is AC 220 volts, volume control is minimum, and Brightness and contrast controls are maximum.

# ALIGNMENT PROCEDURE

## * PRELIMINARY

Alignment is an exacting procedure and should be under taken only when necessary.

The following equipment is required for alignment work.

1. RF sweep generator, with a frequency range covering VHF all channels with a sweep width of at least 10 MHz and having an adjustable output of at least 0.1V.
2. PIF marker with an output of at least 0.1V having frequency range to cover 31.9 MHz, 33.4 MHz 34.47 MHz, 36.9 MHz, 38.9 MHz and 40.4 MHz.
3. Cathode Ray Oscilloscope, preferable with a wide frequency range vertical amplifier and voltage calibrator.
4. DC power supply, of which variable range is 0 to 10 volts DC.
5. Allow at least 15 minutes for set to warm up before alignment is attempted.

## * I-F ALIGNMENT

1. Test Equipment Connection (See Figure 1-A)

   Bias supply·····Supply External AGC Bias (approx, 5V) to TP102.

   RF Sweep Generator·····Connect to the antenna terminal.

   PIF Marker·····Couple loosely to near the Q101.

   Oscilloscope·····Connect to video detector output, at the TP201 in series with 100K ohm resister.

   Turn Channel selector to non active channel and set fine Tuning to suitable position.

2. Alignment

   Adjust L105 for response curve shown in figure 1-B. During the alignment.

   adjust the external AGC bias (TP102) so that the wave form oscilloscope does not exceed 1Vp-p.

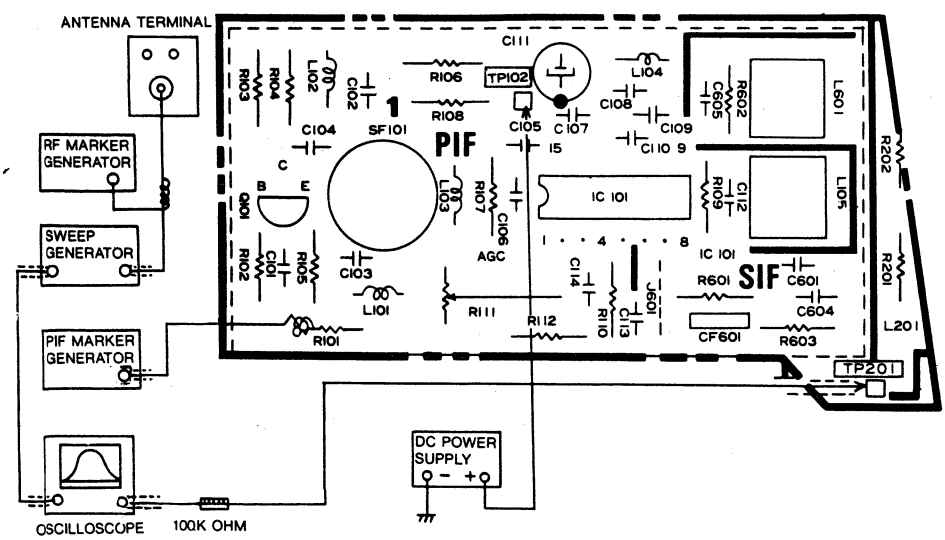



Figure 1-A I-F ALIGNMENT

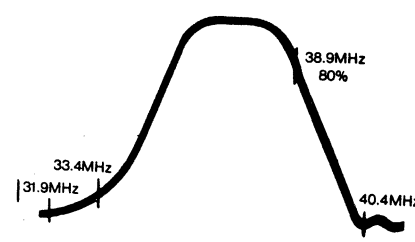



Figure 1-B RESPONSE CURVE

# ALIGNMENT PROCEDURE

## * 5.5MHz TRAP AND SOUND ALIGNMENT.

1. Test Equipment Connection (See Figure 2)

   Bias Supply·····Supply the external AGC (approx. 5volts) to the TP102.

   Signal Generator·····Connect to TP201 in series with 0.01μF capacitor and generator output approx. 100mV.

2. Alignment

   STEP (1)

   Connect Oscilloscope to CRT Cathode Pin 2.

   Set Generator to 5.5MHz CW.

   Adjust L201 for minimum 5.5MHz component on oscilloscope screen.

   STEP (2)

   Connect Oscilloscope to speaker terminal (see Figure 2).

   Set Generator to 5.5MHz modulated by 15KHz deviation with 400Hz.

   Adjust L601 for maximum output on the Oscilloscope screen.

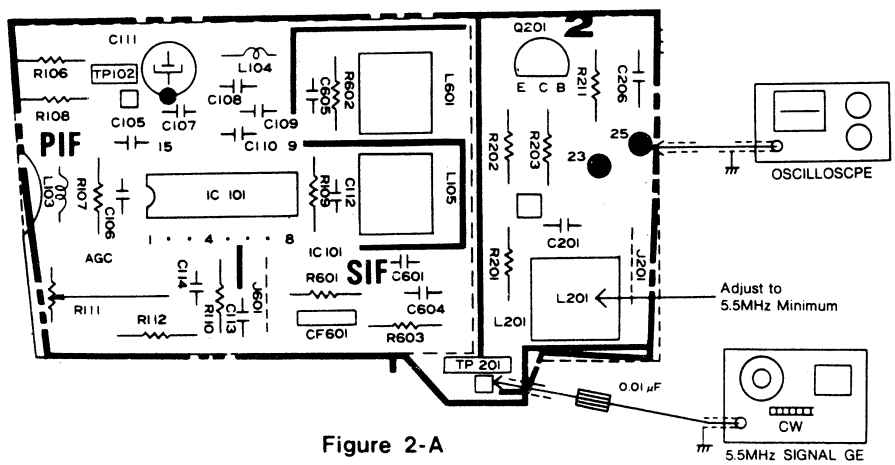



**Figure 2-A**
5.5MHz TRAP ALIGNMENT

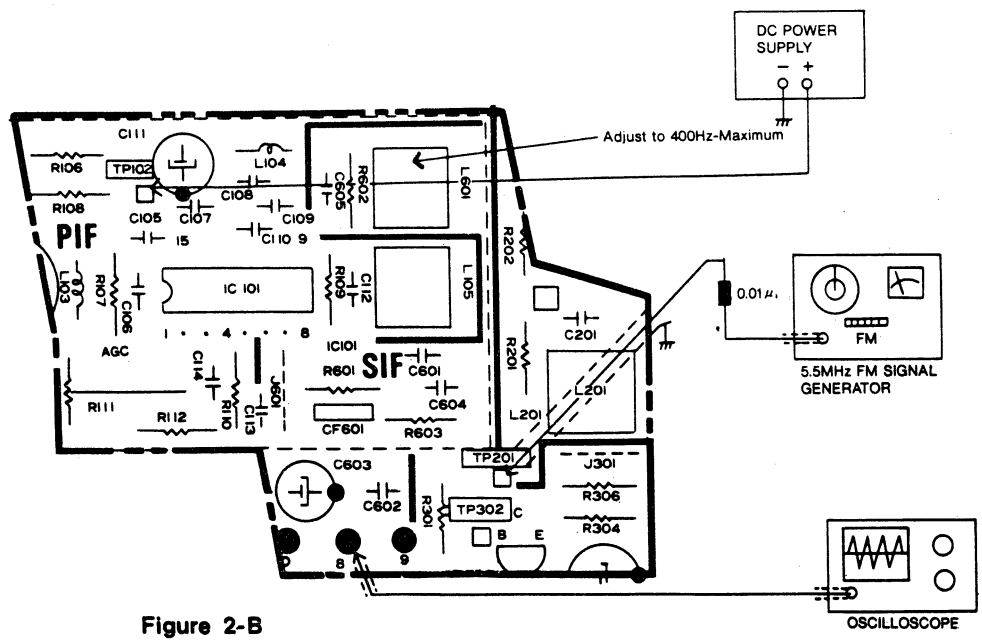
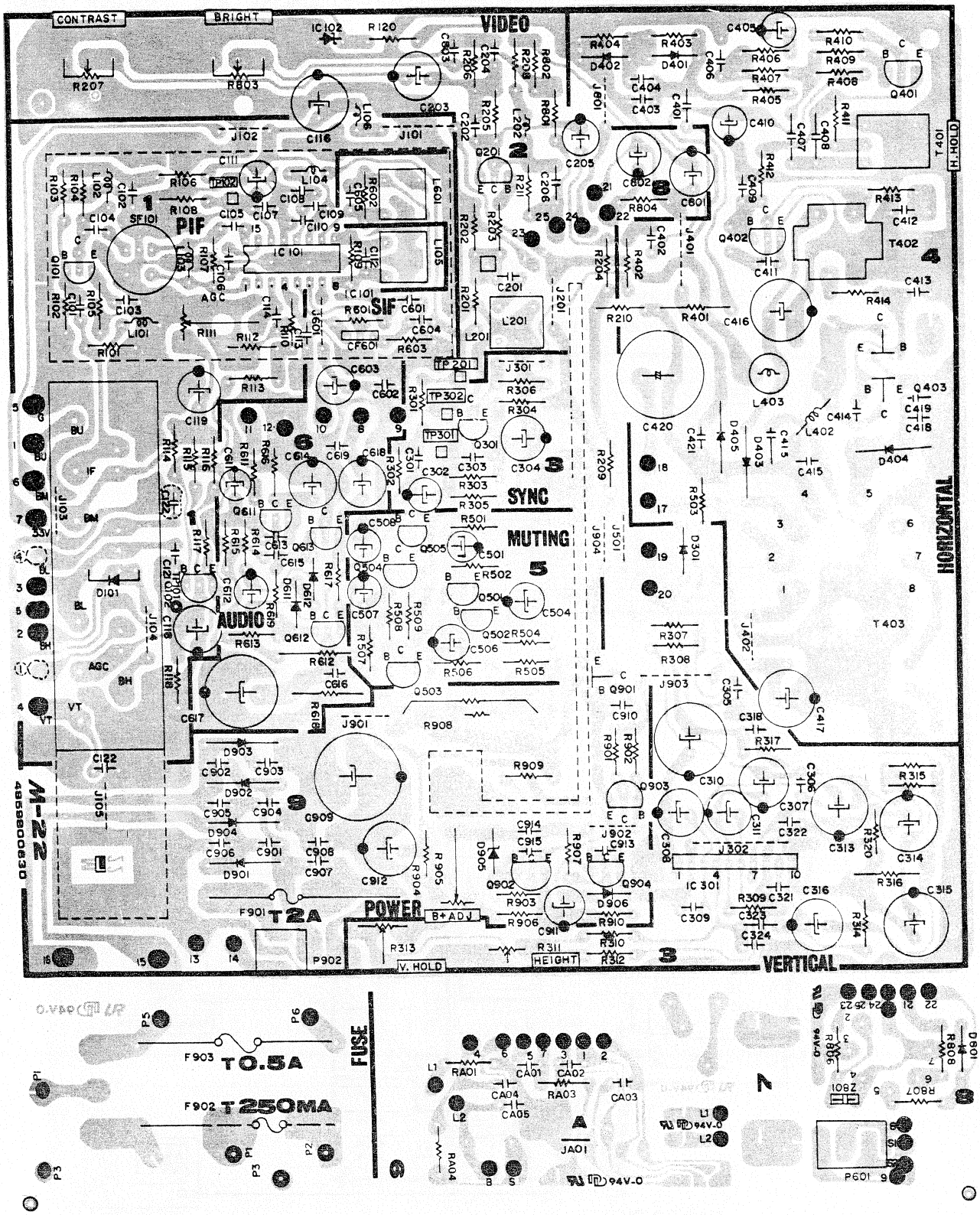
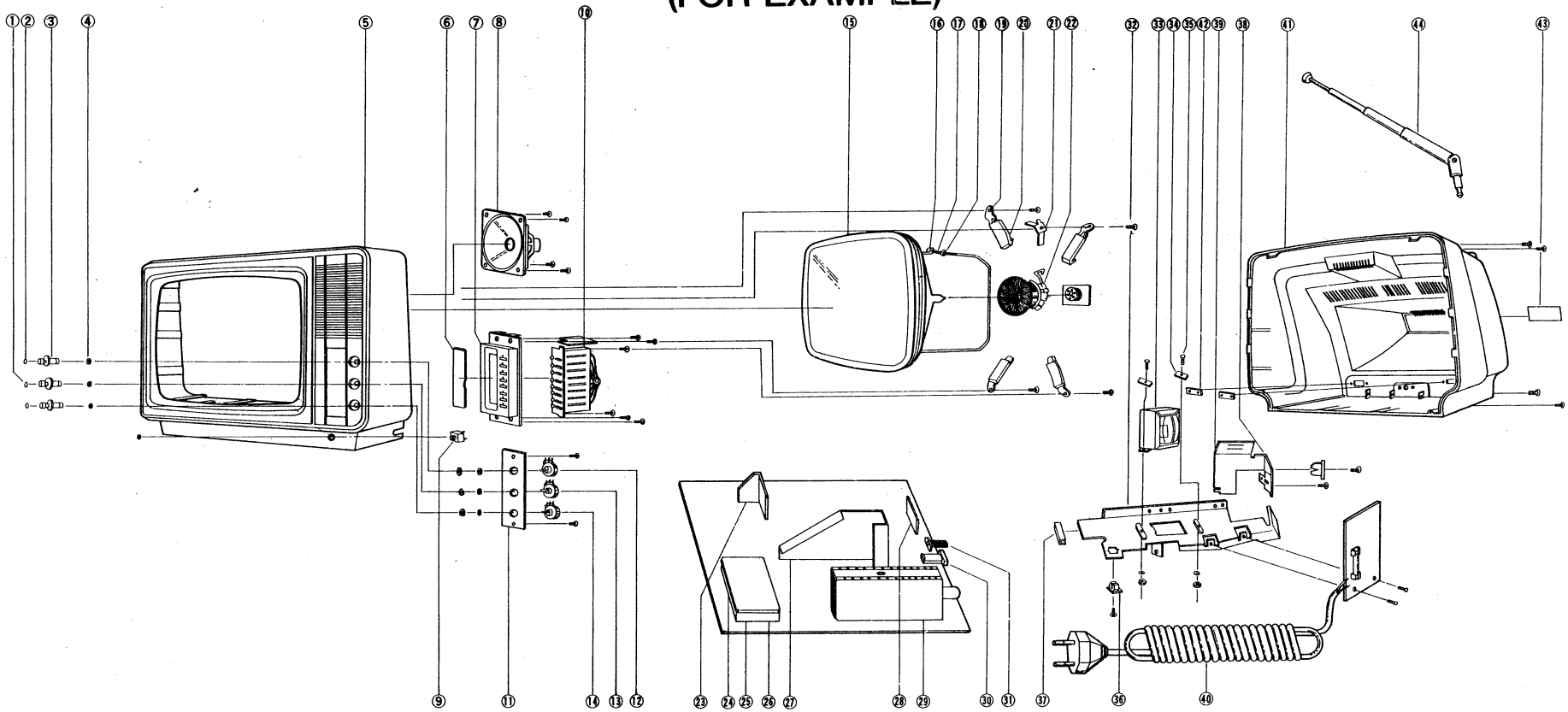



**Figure 2-B**
**SOUND ALIGNMENT**

# PRINTED CIRCUIT BOARDS



# CABINET EXPLODED VIEW
## (FOR EXAMPLE)

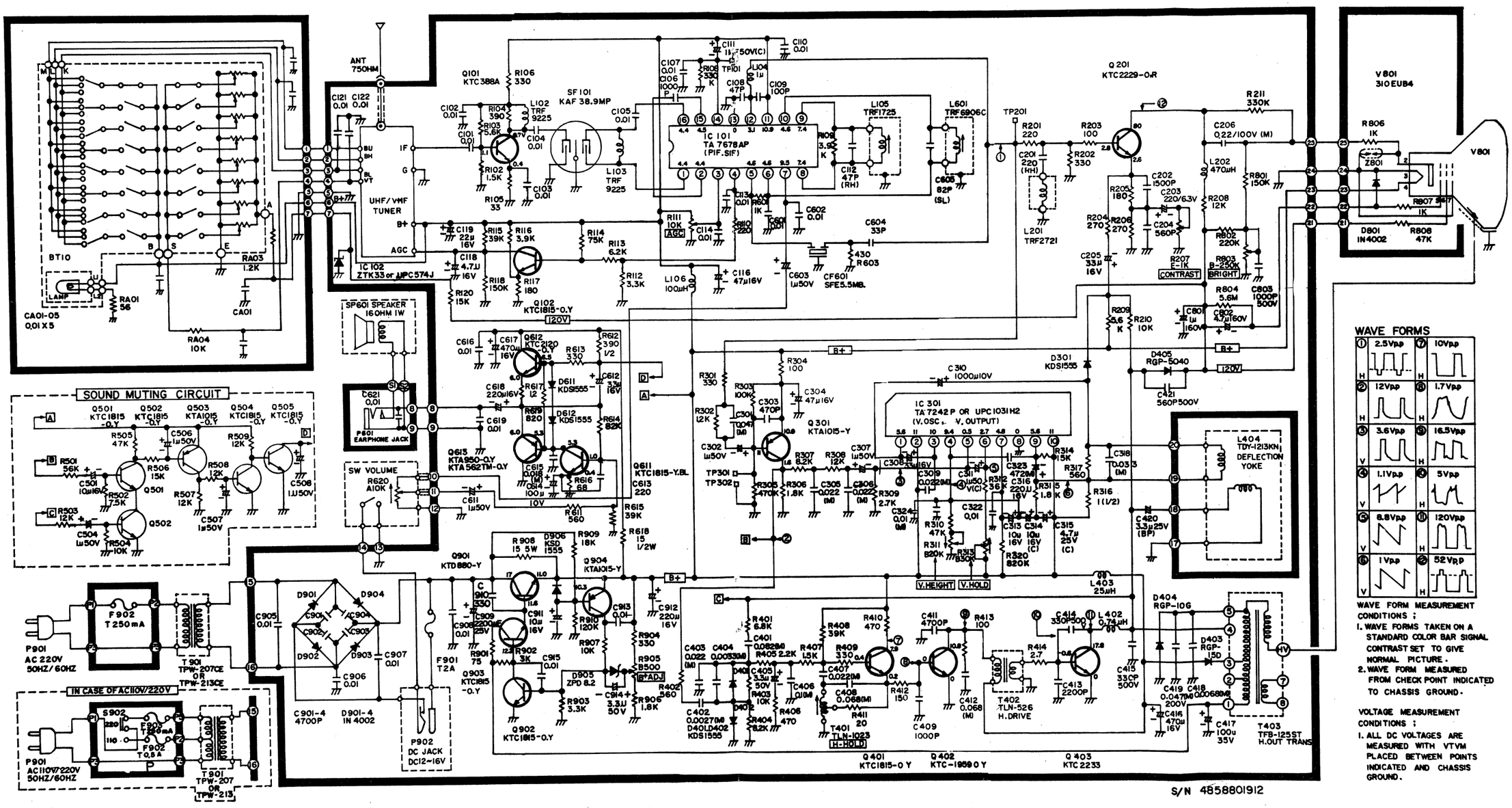


| NO. | STOCK NUMBER | DESCRIPTION | NO. | STOCK NUMBER | DESCRIPTION | NO. | STOCK NUMBER | DESCRIPTION | NO. | STOCK NUMBER | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4855024200 | DECE A S-KNOB | 12 | 551103010A | VR ROTARY | 23 | 4857011800 | PLATE B HT, SINK | 34 | 4856210500 | WASHER |
| 2 | 4855024201 | DECO B S-KNOB | 13 | 551102005E | 〃 | 24 | 4857211400 | SHIELD A CASE | 35 | 7001401011 | SCREW MACHINE |
| 3 | 4854611300 | KNOB SMALL | 14 | 551254005B | 〃 | 25 | 4857211600 | SHIELD A PLATE | 36 | V134493120 | NUT INSULATE |
| 4 | 4856710000 | SPRING PING | 15 | 48596017000 | CRT | 26 | 4857211501 | SHIELD COVER | 37 | 4857710000 | PROTECTOR TRANS |
| 5 | 4852015700 | MASK FRONT | 16 | 4856810500 | WIRE CRT FIX | 27 | 4857013400 | PLATE A HT SINK | 38 | 4853110200 | BRACKET B POWER |
| 6 | 4852916300 | DOOR HOUSING | 17 | 7001406511 | SCREW MACHINE | 28 | 4857013500 | PLATE C HT SINK | 39 | VT02412012 | BRACKET B POWER |
| 7 | 4852916200 | HOUSING SENSOR | 18 | 7391400011 | NUT HEX | 29 | 4859700930 | TUNER VARACTOR | 40 | 4859900111 | CORD POWER |
| 8 | 4858302300 | SPEAKER | 19 | 4853410300 | RETAINER CRT | 30 | 4859100100 | JACK DC | 41 | 4852115100 | BACK COVER |
| 9 | 4859100230 | JACK EARPHONE | 20 | VT23858237 | PACKING CRT | 31 | RV1112303J | R SEMIFIXED | 42 | 4857610000 | PLATE INSU |
| 10 | 5541040010 | VR TUNING UNIT | 21 | 4857910600 | PLATE CRT EARTH | 32 | 4853110100 | BRACKET A POWER | 43 | 4855410069 | PLATE REMARK |
| 11 | 4853026500 | BRACKET VR | 22 | 5800000024 | COIL DY | 33 | 5TPK000046 | TRANS POWER | 44 | 4850A00910 | ROD ANTENNA |

# SCHEMATIC DIAGRAM
## ( CHASSIS NO MC-22G )

NOTE
1 THE UNIT OF RESESISTANCE "OHM" IS OMITTED (K ; 1,000, M ; 1,000,000)
2 ALL RESSISTORS ARE 1/4 WATT, UNLESS OTHERWISE NOTED.
3 ALL CAPACITORS μF, UNLESS OTHERWISE P ( P ; μμF )

THIS SCHEMATIC DIAGRAM MAY BE SUBJECT TO CHANGE FOR PRODUCT IMPROVEMENT WITHOUT PRIOR NOTICE.




### WAVE FORMS

| | | | |
|---|---|---|---|
| ① H | 2.5Vpp | ⑦ H | 10Vpp |
| ② H | 12Vpp | ⑧ H | 1.7Vpp |
| ③ H | 3.6Vpp | ⑨ H | 16.5Vpp |
| ④ V | 1.1Vpp | ⑩ H | 5Vpp |
| ⑤ V | 8.8Vpp | ⑪ H | 120Vpp |
| ⑥ V | 1Vpp | ⑫ H | 52Vpp |

WAVE FORM MEASUREMENT CONDITIONS ;
1. WAVE FORMS TAKEN ON A STANDARD COLOR BAR SIGNAL CONTRAST SET TO GIVE NORMAL PICTURE.
2. WAVE FORM MEASURED FROM CHECK POINT INDICATED TO CHASSIS GROUND.

VOLTAGE MEASUREMENT CONDITIONS ;
1. ALL DC VOLTAGES ARE MEASURED WITH VTVM PLACED BETWEEN POINTS INDICATED AND CHASSIS GROUND.

# REPLACEMENT PARTS

## IC, TRANSISTER, DIODES

| Location Number | Stock Number | Description |
|---|---|---|
| IC101 | 1TA7678AP- | TA7678AP |
| IC102 | 1ZTK33B--- | ZTK33B |
| | or 1UPC574J-- | UPC574J |
| IC301 | 1TA7242P-- | TA7242P |
| Q101 | TKTC388A-- | KTC388A |
| Q102 | TKTC1815-O | KTC1815-O |
| | or TKTC1815Y- | KTC1815-Y |
| Q201 | TKTC2229-O | KTC2229-O |
| | or TKTC2229-Y | KTC2229-Y |
| Q301 | TKTA1015Y- | KTA1015-Y |
| Q401 | TKTC1815-O | KTC1815-O |
| Q402 | TKTC1959-O | KTC1959-O |
| | or TKTC1959-Y | KTC1959-Y |
| Q403 | TKTC2233-- | KTC2233 |
| Q501 | TKTC1815-O | KTC1815-O |
| | or TKTC1815Y- | KTC1815-Y |
| Q502 | TKTC1815-O | KTC1815-O |
| | or TKTC1815Y- | KTC1815-Y |
| Q503 | TKTA1015-O | KTA1015-O |
| | or TKTA1015Y- | KTA1015-Y |
| Q504 | TKTC1815-O | KTC1815-O |
| | or TKTC1815Y- | KTC1815-Y |
| Q505 | TKTC1815-O | KTC1815-O |
| | or TKTC1815Y- | KTC1815-Y |
| Q611 | TKTC1815Y- | KTC1815-Y |
| | or TKTC1815BL | KTC1815-BL |
| Q612 | TKTC2122-O | KTC2122-O |
| | or TKTC2120-Y | KTC2120-Y |
| | TKTC1959-O | KTC1959-O |
| | TKTC1959Y- | KTC1959-Y |
| Q613 | TKTA950-O- | KTA950-O |
| | or TKTA950Y-- | KTA950-Y |
| Q901 | TKTD880Y-- | KTD880-Y |
| Q902 | TKTC1815Y- | KTC1815-Y |
| | or TKTC1959Y- | KTC1959-Y |
| Q903 | TKTC1815-O | KTC1815-O |
| | or TKTC1815Y- | KTC1815-Y |
| Q904 | TKTA1015Y- | KTA1015-Y |
| D301 | DKDS1555-- | KDS-1555 |
| | or DIN4148--- | IN4148 |
| D401 | DKDS1555-- | KDS-1555 |
| | or DIN4148--- | IN4148 |
| D402 | DKDS1555-- | KDS-1555 |
| | or DIN4148--- | IN4148 |
| D403 | DRGP15D--- | RGP-15D |
| | or DIS1834--- | IS1834 |
| D404 | DRGP10G--- | RGP-10G |
| | or DIS2756--- | IS2756 |
| D405 | DRGP5040-- | RGP5040 |
| | or DIS1834--- | IS1834 |
| D611 | DKDS1555-- | KDS-1555 |
| | or DIN4148 | IN4148 |
| D612 | DKDS1555-- | KDS-1555 |
| | or DIN4148--- | IN4148 |
| D801 | DIN4002--- | IN4002 |
| | or DIN5394GP | IN5394GP |
| D901 | DIN4002--- | IN4002 |
| | or DIN5394GP- | IN5394GP |
| D902 | DIN4002--- | IN4002 |
| | or DIN5394GP- | IN5394GP |
| D903 | DIN4002--- | IN4002 |
| | or DIN5394GP- | IN5394GP |
| D904 | DIN4002--- | IN4002 |
| | or DIN5394GP | IN5394GP |
| D905 | DZPD82---- | ZPD8.2 |
| D906 | DKDS1555-- | KDS-1555 |
| | or DIN4148--- | IN4148 |

## COIL, TRANS

| | | |
|---|---|---|
| L102 | 58C5510663 | TRF-9225 |

# REPLACEMENT PARTS

| Location Number | Stock Number | Description |
|---|---|---|
| L103 | 58C5510663 | TRF-9225 |
| L104 | 58P0000005 | TRF-4109K |
| L105 | 58B0000017 | TRF-1725 |
| L106 | 58P101K034 | 100MH |
| L201 | 58T0000005 | TRF-2721 |
| L202 | 58C471K001 | 470MH |
| L402 | 58C748K001 | 0.74MH |
| L403 | 58C250K001 | 25MH |
| L601 | 5TSK000006 | TRF-6906C |
| T401 | 5800000003 | TLN-1023 |
| T402 | 5TDU000003 | TLN-526 |
| T403 | 5THU000011 | TFB-125STL |

## SAW, FILTER

| | | |
|---|---|---|
| SF101 | 5PKAF389MP | KAF38.9MR-MP-3 |

## CERAMIC FILTER

| | | |
|---|---|---|
| CF601 | 5PSFE55MB- | SFE 5.5MB |

## DISCHARGE GAP

| | | |
|---|---|---|
| Z801 | 5990300011 | EGP-H751A |
| | or 5990300012 | SG-A1 |
| | 5990300025 | S-21 |
| | 5990300027 | SD-A1 |

## CAPACITOR

| | | |
|---|---|---|
| C101 | CCBF1H103Z | HIKF 50V 0.01MF Z |
| C102 | CCBF1H103Z | HIKF 50V 0.01MF Z |
| C103 | CCBF1H103Z | HIKF 50V 0.01MF Z |
| C104 | CCBF1H103Z | HIKF 50V 0.01MF Z |
| C105 | CCBF1H103Z | HIKF 50V 0.01MF Z |
| C106 | CCBB 1H102K | HIKB 50V 1000PF K |
| C107 | CCBF1H103Z | HIKF 50V 0.01MF Z |
| C108 | CCSL1H470J | SL 50V 47PF J |
| C109 | CCSL1H101J | SL 50V 100PF J |
| C110 | CCBF1H103Z | HIKF 50V 0.01MF Z |
| C111 | CEBD1H109B | 50V 1MF M(C-TYPE) |
| C112 | CBRH1H470J | RH 50V 47PF J |
| C113 | CCBF1H103Z | HIKF 50V 0.01MF Z |
| C114 | CCBF1H103Z | HIKF 50V 0.01MF Z |
| C116 | CEBD1C470B | 16V 47MF |
| C118 | CEBD1C479B | 16V 4.7MF |
| C119 | CEBD1C220B | 16V 22MF |
| C121 | CCBF1H103Z | HIKF 50V 0.01MF Z |
| C122 | CCBF1H103Z | HIKF 50V 0.01MF Z |
| C201 | CBRH1H221J | RH 50V 220PF J |
| C202 | CCBB1H152K | HIKB 50V 1500PF K |
| C203 | CEBD0J221B | 6.3V 220MF |
| C204 | CCBB1H561K | HIKB 50V 560PF K |
| C205 | CEBD1C330B | 16V 33MF |
| C206 | CM1M2A224K | 100V 0.22MF K |
| C301 | CM1M1H473K | 50V 0.047MF K |
| C302 | CEBD1H109A | 50V 1MF |
| C303 | CCXB1H471K | HIKB 50V 470PF K |
| C304 | CEDD1C470B | 16V 47MF |
| C305 | CM1M1H223K | 50V 0.022MF K |
| C306 | CM1M1H223K | 50V 0.022MF K |
| C307 | CEBD1H109A | 50V 1MF |
| C308 | CEBD1C330B | 16V 33MF |
| C309 | CM1M1H223K | 50V 0.022MF K |
| C310 | CEDD1A102B | 10V 1000MF |
| C311 | CEBD1H109B | 50V 1MF M (C-TYPE) |
| C313 | CEDD1C100B | 16V 10MF |
| C314 | CEDB1C100B | 16V 10MF (C-TYPE) |
| C315 | CEDB1E479B | 25V 4.7MF (C-TYPE) |
| C316 | CEDD1C221B | 16V 220MF |
| C318 | CMYM1H333K | 50V 0.033MF K |
| C322 | CCBF1H103Z | HIKF 50V 0.01MF Z |
| C323 | CMXM1H472K | 50V 4700PF Z |
| C324 | CMXM1H103K | 50V 0.01MF Z |
| C401 | CMYM1H823K | 50V 0.082MF K |
| C402 | CMYM1H272K | 50V 2700PF K |
| C403 | CMYM1H223K | 50V 0.022MF K |
| C404 | CMYM1H332K | 50V 3300PF K |
| C405 | CEBD1H339B | 50V 3.3MF |
| C406 | CMYM1H104K | 50V 0.1MF K |

# REPLACEMENT PARTS

| Location Number | Stock Number | Description |
|---|---|---|
| C407 | CMYM1H223K | 50V 0.022MF K |
| C408 | CMYM1H683K | 50V 0.068MF K |
| C409 | CCBB1H102K | HIKB 50V 1000PF K |
| C411 | CCBB1H472K | HIKB 50V 4700PF K |
| C412 | CMYM1H683K | 50V 0.068MF K |
| C413 | CCBB1H222K | HIKB 50V 2200PF K |
| C414 | CCBB2H331K | HIKB 500V 330PF K |
| C415 | CCBB2H331K | HIKB 500V 330PF K |
| C416 | CEDD1C471B | 16V 470MF |
| C417 | CEDD1V101B | 35V 100MF |
| C418 | CMYN2D682K | 200V 0.0068MF K |
| C419 | CMYN2D473K | 200V 0.047MF K |
| C420 | CEBD1E339F | 25V 3.3MF NP |
| C421 | CCBB2H561K | HIKB 500V 560PF K |
| C501 | CEDD1C100B | 16V 10MF |
| C504 | CEBD1H109A | 50V 1MF |
| C506 | CEBD1H109A | 50V 1MF |
| C507 | CEBD1H109A | 50V 1MF |
| C508 | CEBD1H109A | 50V 1MF |
| C601 | CCBF1H103Z | HIKF 50V 0.01MF Z |
| C602 | CCBF1H103Z | HIKF 50V 0.01MF Z |
| C603 | CEBD1H109A | 50V 1MF |
| C604 | CCCH1H330K | CH 50V 33PF K |
| C605 | CXSL1H820J | SL 50V 82PF J |
| C611 | CEBD1H109A | 50V 1MF |
| C612 | CEDD1C330B | 16V 33MF |
| C613 | CCXB1H221K | HIKB 50V 220PF K |
| C614 | CEDD1A101B | 10V 100MF |
| C615 | CMYM1H183K | 50V 0.018MF K |
| C616 | CCBF1H103Z | HIKF 50V 0.01MF Z |
| C617 | CEDD1C471B | 16V 470MF |
| C618 | CEDD1C221B | 16V 220MF |
| C619 | CCBF1H103Z | HIKF 50V 0.01MF Z |
| C621 | CCXF1H103Z | HIKF 50V 0.01MF Z |
| C801 | CEDD2C109B | 160V 1MF |
| C802 | CEDD2C479B | 160V 4.7MF |
| C803 | CCBB2H102K | 500V 1000PF K |
| C901 | CCBF1H472Z | HIKF 50V 4700PF Z |

| Location Number | Stock Number | Description |
|---|---|---|
| C902 | CCBF1H472Z | HIKF 50V 4700PF Z |
| C903 | CCBF1H472Z | HIKF 50V 4700PF Z |
| C904 | CCBF1H472Z | HIKF 50V 4700PF Z |
| C905 | CCBF1H103Z | HIKF 50V 0.01MF Z |
| C906 | CCBF1H103Z | HIKF 50V 0.01MF Z |
| C907 | CCBF1H103Z | HIKF 50V 0.01MF Z |
| C908 | CCBF1H103Z | HIKF 50V 0.01MF Z |
| C909 | CECD1F222C | 25V 2200MF |
| C910 | CCBB1H331K | HIKB 50V 330PF K |
| C911 | CECD1C100B | 16V 10MF |
| C912 | CECD1C221B | 16V 220MF |
| C913 | CCBF1H103Z | HIKF 50V 0.01MF Z |
| C914 | CEXD1H339B | 50V 3.3 MF Z |
| C915 | CCBF1H103Z | HIKF 50V 0.01MF Z |
| CA01 | CCBF1H103Z | HIKF 50V 0.01MF Z |
| CA02 | CCBF1H103Z | HIKF 50V 0.01MF Z |
| CA03 | CCBF1H103Z | HIKF 50V 0.01MF Z |
| CA04 | CCBF1H103Z | HIKF 50V 0.01MF Z |
| CA05 | CCBF1H103Z | HIKF 50V 0.01MF Z |

## RESISTOR

| | | |
|---|---|---|
| R102 | RD-4Z152J- | ¼W 1.5K OHM J |
| R103 | RD-4Z562J- | ¼W 5.6K OHM J |
| R104 | RD-4Z391J- | ¼W 390 OHM J |
| R105 | RD-4Z330J- | ¼W 33 OHM J |
| R106 | RD-4Z331J- | ¼W 330 OHM J |
| R108 | RD-4Z334J- | ¼W 330K OHM J |
| R109 | RD-4Z392J- | ¼W 3.9K OHM J |
| R110 | RD-4Z221J- | ¼W 220 OHM J |
| R112 | RD4Z332J- | ¼W 3.3K OHM J |
| R113 | RD-4Z622J- | ¼W 6.2K OHM J |
| R114 | RD-4Z753J- | ¼W 75K OHM J |
| R115 | RD-4Z393J- | ¼W 39K OHM J |
| R116 | RD-4Z392J- | ¼W 3.9K OHM J |
| R117 | RD-4Z181J- | ¼W 180 OHM J |
| R118 | RD-4Z154J- | ¼W 150K OHM J |

# REPLACEMENT PARTS

| Location Number | Stock Number | Description |
|---|---|---|
| R120 | RD-4Z153J- | ¼W 15K OHM J |
| R201 | RD-4Z221J- | ¼W 220 OHM J |
| R202 | RD-4Z331J- | ¼W 330 OHM J |
| R203 | RD-4Z101J- | ¼W 100 OHM J |
| R204 | RD-4Z271J- | ¼W 270 OHM J |
| R205 | RD-4Z181J- | ¼W 180 OHM J |
| R206 | RD-4Z271J- | ¼W 270 OHM J |
| R208 | RD-4Z123J- | ¼W 12K OHM J |
| R209 | RD-4Z562J- | ¼W 5.6K OHM J |
| R210 | RD-4Z103J- | ¼W 10K OHM J |
| R211 | RD-4Z334J- | ¼W 330K OHM J |
| R301 | RD-4Z331J- | ¼W 330 OHM J |
| R302 | RD-4Z122J- | ¼W 1.2K OHM J |
| R303 | RD-4Z104J- | ¼W 100K OHM J |
| R304 | RD-4Z101J- | ¼W 100 OHM J |
| R305 | RD-4Z474J- | ¼W 470K OHM J |
| R306 | RD-4Z182J- | ¼W 1.8K OHM J |
| R307 | RD-4Z822J- | ¼W 8.2K OHM J |
| R308 | RD-4Z123J- | ¼W 12K OHM J |
| R309 | RD-4Z272J- | ¼W 2.7K OHM J |
| R310 | RD-4Z473J- | ¼W 47K OHM J |
| R312 | RD-4Z333J- | ¼W 33K OHM J |
| R314 | RD-4Z153J- | ¼W 15K OHM J |
| R315 | RD-4Z182J- | ¼W 1.8K OHM J |
| R316 | RS-2F109K- | ½W 1 OHM K |
| R317 | RD-4Z561J- | ¼W 560 OHM J |
| R320 | RD-4Z824J- | ¼W 820K OHM J |
| R401 | RD-4Z682J- | ¼W 6.8K OHM J |
| R402 | RD-4Z561J- | ¼W 560 OHM J |
| R403 | RD-4Z103J- | ¼W 10K OHM J |
| R404 | RD-4Z822J- | ¼W 8.2K OHM J |
| R405 | RD-4Z222J- | ¼W 2.2K OHM J |
| R406 | RD-4Z471J- | ¼W 470 OHM J |
| R407 | RD-4Z152J- | ¼W 1.5K OHM J |
| R408 | RD-4Z393J- | ¼W 39K OHM J |
| R409 | RD-4Z331J- | ¼W 330 OHM J |
| R410 | RD-4Z471J- | ¼W 470 OHM J |
| R411 | RD-4Z220J- | ¼W 22 OHM J |
| R412 | RD-4Z151J- | ¼W 150 OHM J |
| R413 | RD-4Z101J- | ¼W 100 OHM J |
| R414 | RD-4Z279J- | ¼W 2.7 OHM J |
| R501 | RD-4Z563J- | ¼W 56K OHM J |
| R502 | RD-4Z752J- | ¼W 7.5K OHM J |
| R503 | RD-4Z123J- | ¼W 12K OHM J |
| R504 | RD-4Z103J- | ¼W 10K OHM J |
| R505 | RD-4Z473J- | ¼W 47K OHM J |
| R506 | RD-4Z153J- | ¼W 15K OHM J |
| R507 | RD-4Z123J- | ¼W 12K OHM J |
| R508 | RD-4Z123J- | ¼W 12K OHM J |
| R509 | RD-4Z123J- | ¼W 12K OHM J |
| R601 | RD-4Z102J- | ¼W 1K OHM J |
| R603 | RD-4Z431J- | ¼W 430 OHM J |
| R611 | RD-4Z561J | ¼W 560 OHM J |
| R612 | RD-4Z391J- | ¼W 390 OHM J |
| R613 | RD-4Z331J- | ¼W 330 OHM J |
| R614 | RD-4Z823J- | ¼W 82K OHM J |
| R615 | RD-4Z393J- | ¼W 39K OHM J |
| R616 | RD-4Z680J- | ¼W 68 OHM J |
| R617 | RD-4Z129J- | ¼W 1.2 OHM J |
| R618 | RF-2F150J- | ½W 15 OHM J |
| R619 | RD-4Z821J- | ¼W 820 OHM J |
| R801 | RD-4Z154J- | ¼W 150K OHM J |
| R802 | RD-4Z184J- | ¼W 180K OHM J |
| R803 | 551254070B | VO16L8-7-2 20F B 250K |
| R804 | RD-4Z565J- | ¼W 5.6M OHM J |
| R806 | RD-4Z102J- | ¼W 1K OHM J |
| R807 | RD-4Z102J- | ¼W 1K OHM J |
| R808 | RD-4Z473J- | ¼W 47K OHM J |
| R901 | RD-4Z750J- | ¼W 75 OHM J |
| R902 | RD-4Z302J- | ¼W 3K OHM J |
| R903 | RD-4Z332J- | ¼W 3.3K OHM J |
| R904 | RD-4Z331J- | ¼W 330 OHM J |

# REPLACEMENT PARTS

| Location Number | Stock Number | Description |
|---|---|---|
| R906 | RD-4Z182J- | ¼W 1.8K OHM J |
| R907 | RD-4Z103J- | ¼W 10K OHM J |
| R908 | RX05Z150J- | 5/1W 15 OHM J |
| R909 | RD-4Z183J- | ¼W 18K OHM J |
| R910 | RD-4Z124J- | ¼W 120K OHM J |
| RA01 | RD-4Z560J- | ¼W 56 OHM J |
| RA03 | RD-4Z122J- | ¼W 1.2K OHM J |
| RA04 | RS-4Z103J- | ¼W 10K OHM J |

## MISCELLANEOUS

| | | |
|---|---|---|
| H101 | 4859700930 | VTE-1CDH |
| P601 | 4859100200 | SE-020-(JACK EARPHONE) |
| P901 | 4859900111 | CORD POWER |
| P902 | 4859100100 | JACK DC (HEC0470) |
| | 4859300130 | PM8230 UL94V-1 (CRT SOCEKT) |
| IC301A | 487013500 | PLATE C HEAT SINK |
| Q403A | 4857011800 | PLATE B HEAT SINK |
| | 4857211400 | SHIELD A CASE |
| | 4857211600 | SHIELD A PLATE |
| | 4857211500 | SHIELD A COVER |
| | 4857213900 | SHIELD B PLATE |
| F901 | 5F3GB2022R | FUSE 2A 250V |
| F902 | 5F3GB2511R | FUSE 0.25AT |
| V801 | 4859601700 | CRT (310EUB4) |
| SP601 | 4858302500 | SPEAKER (16 OHM 1W) |
| L404 | 58D0000024 | TDY-1213KN (COIL DY) |
| T901 | 5TPK000046 | TPW-207CE (TRANS POWER) |
| | 4853015700 | FRONT MASK |
| | 4852115100 | BACK COVER |
| Q901A | 4857013400 | PLATE A HEAT SINK |
| | 4850A00910 | ANTENNA ROD |

| Location Number | Stock Number | Description |
|---|---|---|

## VARIABLE RESISTORS

| | | |
|---|---|---|
| R111 | RV1415103- | V10K 7-4-12B 10K OHM |
| | or RV1414103- | TVP114 B 10K |
| R207 | 551102005E | VM10Z E 1K |
| | or 551102002E | V16L4N 20F (BC) 25C 1K |
| R311 | RV1216203- | V10K 7-1-12B 20K |
| R313 | RV1112303J | V18K 3-7 (25US) B30K |
| | or RV1112303L | TRV161 23M B 30K |
| R620 | 551103010A | 24US 70N 20F A10K |
| R803 | 551254005B | VM10Z B 250K |